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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,123	11/26/2001	Andrew G. Swales	SAA-5-2	6275

7590 12/06/2004
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EXAMINER

LEZAK, ARRIENNE M

ART UNIT PAPER NUMBER

2143

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/003,123

Applicant(s)

SWALES ET AL.

Examiner

Arrienne M. Lezak

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2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Examiner notes that no Claims have been added, amended or cancelled.

Applicant's arguments with respect to Claims 11-31 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11-21, 24-29 & 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over extensive consideration of US Patent 5,862,391 to Salas in view of US Patent 5,375,070 to Hershey.

4. Regarding Claims 11-14, 24 and 25, Salas discloses a network communication system, (Abstract; Col. 57, lines 30-67; Cols. 58-62), comprising:

- a master device for exclusively initiating a request message, (Col. 2, lines 3-12);
- a slave device being exclusively responsive to the request message header, (per pending Claim 13), exclusively initiated by the master device, (per pending Claim 14), (Col. 2, lines 3-32; Col. 6, lines 21-36; Cols. 23, 24; and Col. 26, lines 36-65), (Examiner notes that Salas discloses a

configuration functionality wherein it would have been obvious to configure exclusive relationships between network components providing notification for the same as needed. Specifically, Examiner notes that a slave device obviously requires knowledge of its master device, which knowledge would be included within communication parameters set up during configuration.); and

- an optimal communication stack protocol utilized to communicate the request message and the response message between the master and the slave devices, (Col. 6, lines 5-45), the optimal protocol comprising:

- an IP protocol, (Abstract; Fig. 3; and Col. 2, lines 26-32);
 - a TCP protocol, (Abstract; Fig. 3; and Col. 2, lines 26-32); and
 - an application layer MODBUS protocol, (per pending Claims 12 & 25), wherein the building and parsing of the response message is responsive to a first part, or predetermined index of the request message, (Abstract; Fig. 3; Col. 2, lines 26-32; and Col. 26, lines 36-65).

5. As noted herein above, Salas discloses optimizing a MODBUS/TCP/IP stack, (Col. 6, lines 5-45), however, Salas does not specifically disclose or describe optimizing a MODBUS/TCP/IP stack with a “finite state machine” that takes advantage of a priori assumptions, (per pending Claim 24). Hershey discloses the use of finite state machines for performance optimization, (Col. 18, lines 37-48). The motivation to substitute the optimized MODBUS/TCP/IP stack of Salas with the finite state machine of

Hershey is to provide an architecture and method for applying a real time feedback control to the logical or physical network behavior of a complex data communications network, (Hershey, Col. 3, lines 48-51). Thus, Claims 11-21, 24-29 & 31 are found to be unpatentable over the combined teachings of Salas in view of Hershey.

6. Regarding Claims 15, 27 and 28, Salas in view of Hershey is relied upon for those teachings disclosed herein. Salas further discloses a network communication system comprising a set of predetermined response messages including at least one predetermined response message, each predetermined response message being distinguishable by the first part of the request message wherein the predetermined response message is determined from the content of the first part of the request message and rapidly selected from the optimal communication stack for quickly responding to the request message, (Salas - Col. 6, lines 5-36). Examiner notes that protocols such as MODBUS, TCP/IP and Commnet obviously if not inherently comprise predetermined response messages. Thus, Claims 15, 27 and 28 are found to be unpatentable over the combined teachings of Salas in view of Hershey.

7. Regarding Claims 16-20, Salas in view of Hershey is relied upon for those teachings disclosed herein. Salas further discloses protocols such as MODBUS, TCP/IP, Ethernet and Commnet, which obviously if not inherently comprise predetermined response messages including, an address resolution protocol request message, an Internet control management protocol request message, a TCP connection request message, a TCP disconnect request message or a MODBUS request message as a TCP data frame, (Salas - Col. 6, lines 5-45 and Col. 29, lines 28-

43). Thus, Claims 16-20 are found to be unpatentable over the combined teachings of Salas in view of Hershey.

8. Regarding Claims 21, 26 and 29, Salas in view of Hershey is relied upon for those teachings disclosed herein. Salas further discloses a network communication system wherein each device limits its message to a length that is less than both a TCP transaction length and a maximum transmission unit, (Col. 2, lines 20-32 and Col. 6, lines 5-36). Examiner notes that since Salas uses TCP/IP, the limitation of message length would be obviously if not inherently compatible with the TCP/IP protocol. Thus, Claims 21, 26 and 29 are found to be unpatentable over the combined teachings of Salas in view of Hershey.

9. Regarding Claim 31, Salas in view of Hershey is relied upon for those teachings disclosed herein. Salas further discloses an Ethernet module wherein the control processing unit is operably coupled to a factory automation unit, (Fig. 2; Fig. 3; Col. 10, lines 15-67; and Col. 11, lines 1-18). Thus, Claim 31 is found to be unpatentable over the combined teachings of Salas in view of Hershey.

10. Claims 22, 23 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,862,391 to Salas in view of US Patent 5,375,070 to Hershey in further view of US Patent 5,757,924 to Friedman.

11. Salas in view of Hershey is relied upon for those teachings disclosed herein. Salas discloses the use of TCP protocol; however, Salas does not exclusively utilize TCP port number 502, (pending Claims 22 and 30), wherein any message not transmitted via the TCP port number 502 is ignored, (pending Claim 23). Friedman

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discloses a network device wherein a firewall/router decided whether to pass a packet based on the source and/or destination IP address and the TCP port number, (Friedman - Col. 3, lines 62-67 and Col. 4, line 1).

12. To incorporate the filtering method of Friedman into the Salas apparatus would have been obvious to one of ordinary skill in the art at the time of invention by Applicant as indicated within the teachings of Salas. The motivation to combine is found within the Salas teachings pertaining to a port byte, indicative of which port a gateway message is to be transmitted on, (Salas - Col. 6, lines 26-28). As Salas provides a method for distinguishing transmission by port number, the enumeration of a specific port number, (like 502), would have been obvious, particularly in light of the use of a MODBUS protocol, (as taught by Salas), which obviously utilizes port 502. Thus, Claims 22, 23 and 30 are found to be unpatentable over the combined teachings of Salas in view of Hershey in further view of Friedman.

Double Patenting

Examiner acknowledges submission of a Terminal Disclaimer dated 19 August 2004 regarding US Patent 6,282,454 to Popadopoulos as well as the Terminal Disclaimer dated 29 March regarding US Patent 6,321,272 B1 to Swales. Thus, the Double Patenting rejection(s) are hereby withdrawn.

Conclusion

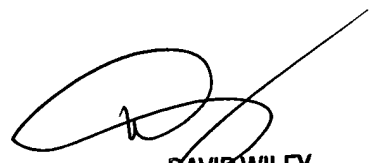
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arrienne M. Lezak whose telephone number is (571)-272-3916. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571)-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arrienne M. Lezak
Examiner
Art Unit 2143

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